Bonneville Power Administration
Transmission Business Line
Unofficial Glossary of Terms

These definitions are intended to reflect commonly used energy concepts, and describe them in a fairly straightforward manner. They are not official definitions and have not been approved or endorsed by Bonneville management.

Access Charge: A fee levied for access to a utility's transmission or distribution system. It is a charge for the right to send electricity over another's wires and is not typically tied to the actual amount of power shipped.

Alternating Current (AC): An electric current that reverses its direction of flow periodically. (See Direct Current.)

Alternative Dispute Resolution (ADR): A process by which parties agree to be bound by arbitration or some other dispute resolution mechanism rather than fully litigate issues before a judge.

American Public Power Association (APPA): The trade association that primarily represents municipal utilities. 2301 M Street NW, Washington, DC 20037. (202) 467-2900. Web address: www.appanet.org

Ampere (amp): A unit of measuring electric flow. The current produced by one volt in a circuit acting across a resistance of one ohm.

Ancillary Services: Services necessary to support the transmission of electric energy from resources to loads while maintaining reliable operation of the transmission system. Examples include spinning reserve supplemental reserve, reactive power, regulation and frequency response, and energy imbalance.

Arbitrage: The simultaneous purchase of one commodity against the sale of another in order to profit from fluctuations in the usual price relationships.

Area Control Error (ACE): The instantaneous difference between actual and scheduled interchange, taking into account the effects of frequency bias.

Available Margin: The difference between available resources and net internal demand, expressed as a percent of available resources. This is the capacity available to cover random factors such as forced outages of generating equipment, demand forecast errors, weather extremes, and capacity service schedule slippages.

Available Transmission Capacity (ATC): A measure of the electric transfer capability remaining in the physical transmission network for sale over and above already committed uses. ATC is defined as the Total Transfer Capability (TTC), less the Transmission Reliability Margin (TRM), less the sum of existing transmission commitments (which includes retail customer service) and the Capacity Benefit Margin (CBM). (Also Available Transfer Capability)

Average Megawatt: The amount of energy consumed by a one Megawatt load served 24 hours a day for one year.

Backstop Authority: The ability, obligation, or responsibility of an entity to address an issue when an entity or entities holding primary authority have not resolved an issue, have created incompatible resolutions or have not acted.

Backup Power: Power provided from another utility to take the place of a regular power source that defaults.

Baseload Generation: Electric generation with the lowest incremental or variable cost which is in nearly continuous operation.

Bilateral Agreement: A contract that is limited exclusively to two parties that trade with each other.

Blackout: Emergency loss of electricity through the failure of generation, transmission or distribution systems.

Bonneville Power Administration (BPA): A federal power marketing and electric transmission agency of the U.S. Government with headquarters in Portland, OR. In the Northwest, BPA markets wholesale power from 31 federally owned dams, one nuclear plant and a large wind energy program.

Brokers: Representatives who match wholesale power buyers to sellers for a fee. They are subject to Federal Energy Regulatory Commission jurisdiction.

Bulk Power System: Term for all electric generating plants, transmission lines and equipment.

Bulk Power Transaction: An exchange of power between utility companies or marketers, routinely engaged in to improve reliability, reduce costs and provide electricity for resale.

Bulk Power Transfers: High voltage transfers of power between utilities who provide either transmission or distribution or both.

Busbar Cost: The cost of producing one KWh of electricity delivered to, but not through, the transmission system.

Busbar: The point at which power is available for transmission.

California ISO: Created by California in 1996, this independent system operator, assumed computerized command of the state's long-distance, high-voltage power lines in March, 1998.

Capacitor: A device that maintains or increases voltage in power lines and improves efficiency of the system by compensating for inductive losses.

Capacity (Generating): The maximum generation output of a facility, usually expressed in megawatts (mw). Capacity can refer to the output of a single generator, a plant, an entire electric system, a power pool, or Region. Summer or winter capacity is a reference to expected generator capability at the time of the summer or winter peak demand period. Capacity is also used in the ancillary services context to refer to offering to hold a portion of a plant's capability from power production so that a control area can tap it to produce power if there is a need for it.

Capacity Benefit Margin (CBM): Amount of transmission transfer capability set aside by load-serving entities to ensure access to generation from interconnected systems to meet generation reliability requirements. Reservation of CBM by a load-serving entity allows that entity to reduce its installed generating capacity below that which may otherwise have been necessary without interconnections to meet its generation reliability requirements.

Capacity Emergency: A condition that exists when a system's or pool's load exceeds its operating capacity and cycling reserve margin.

Capacity Margin: The capacity margin in mw is the difference between net capacity resources and net internal demand. Capacity margin in percent is this difference expressed as a percent of net capacity resources.

Capacity Purchases/Sales: Total of all capacity purchases/sales from entities outside the interconnection boundaries of the reporting party. Transfers such as economy, maintenance, general purpose, non-displacement or emergency should not be included.

Cascading Outage: The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

Circuit: A path through which electric current can flow.

Clean Air Act: Originally passed in 1963 to regulate emissions in the atmosphere, the most recent amendments were added in 1990, principally to set stricter limits on contaminants including utility, industrial and motor vehicle emissions, Nox, sulfur dioxide, and chlorofluorocarbons. It set tougher national air quality standards and set up a system of tradable emissions allowances.

Co-generation: Power generated at a manufacturing plant as a byproduct of producing steam. Natural gas is a favored fuel for combined-cycle cogeneration units, in which waste heat is converted to electricity.

Coincident Demand: The sum of the simultaneous demands of a group of consumers.

Coincidental Peak Load: Two or more loads measured simultaneously, at least one of which is at peak within a specified time frame. Coincident peak load occurs at the time that some reference load experiences its peak.

Combined Cycle Generation: An electric generating method in which electricity is produced from otherwise lost waste heat created by one or more gas (combustion) turbines. The heat is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

Combined Pumped-Storage Plant: A pumped-storage hydroelectric power plant that uses both pumped water and natural stream flow to produce electricity.

Combustion Turbine: An electric generating unit that uses a gas turbine engine. A "simple cycle" unit uses a simple engine that combines air with natural gas or oil and burns it. A "combined cycle" turbine uses waste heat from the gas turbine to produce steam, which then turns a steam turbine to produce additional electricity.

Commercial Practices: Products and practices involved in trading electricity.

Commission: The regulatory body having jurisdiction over a utility. For example, the Federal Energy Regulatory Commission (FERC), or state Public Service Commission (PSC).

Comparability Tariffs: In a restructured wholesale electrical market, according to FERC Order 888, there should be non-discriminatory, open access charges or tariffs for use of the transmission network by all generators of wholesale electricity on a comparable basis. These tariffs provide that the same prices, terms and conditions would apply to both the utility for its own transactions and to other generators.

Competition Transition Charge (CTC): From California, a mechanism implemented along with the restructuring of the electric industry in order to allow incumbent utilities to recover their stranded generation costs.

Congestion: Transmission paths that are constrained, which means limit power transactions because of insufficient capacity. Congestion can be relieved by increasing generation or by reducing load.

Conservation: When applied to BPA, means an increase in efficiency of electric power consumption. In general, it means a reduction in power consumption.

Consumer-Owned Cooperatives: Cooperatives formed under state or federal law to provide electric power to members.

Contract Demand: The daily, monthly or annual quantity of gas or transportation a party agrees to furnish and for which a buyer agrees to pay a set charge. Often expressed in monthly fees for daily maximum quantities.

Contract Path: A path that is designated as a flow of continuous electrical energy between parties to an electric power transaction. It is an assumption used to simplify transmission pricing. Because of the laws of physics, it is unlikely that the actual flow of electrons will follow the contract path.

Control Area: Electric power system/systems to which a common automatic generation control scheme is applied to match loads to resources within the system, maintain scheduled interchange between control areas, maintain frequency within reasonable limits, and provide sufficient generation capacity to maintain operating reserves.

Cooperative Electric Utility: Utility owned and operated for the benefit of those using its service. The coop may generate, transmit or distribute energy to an area not served by another utility. Electric coops mainly serve rural areas avoided by investor-owned utilities in the early days of electrification because of their sparse population. Coops have received low-interest loans from the federal government.

Critical Water: A planning concept based on the lowest flows in the history of the Columbia River. It defines the least amount of Firm Power that can be assumed to be produced by the Federal Columbia River Power System in a year. It is a function of historical water flows, the shape of demand and reservoir storage capacity.

Curtailment: A reduction in the scheduled capacity or energy delivery in response to a transmission constraint.

Cutplanes: Reference points on a set of transmission lines that define capacity restrictions under certain operating conditions or when facilities are out of service. They are identified with transmission constraints.

Cycling Units: Electric generation units which operate with rapid changes in load and frequent starts and stops. These generally have higher operational costs than baseload plants, and are used for peak load.

Daily Peak: A block of time during which the largest level of electricity is used in a day.

Death Spiral: A self-propagating collapse in utility revenues, triggered by attempts to respond to a price-induced loss in sales by charging higher prices to maintain revenues, thereby prompting further load loss, and further price increases, until the company economically collapses.

Demand: The amount of power consumers require at a particular time. Demand is synonymous with Load. It is also the amount of power that flows over a transmission line. System Demand is measured in megawatts.

Demand-Side Management: Deliberate intervention by a utility in the marketplace to influence demand for electric power or shift the demand to different times to capture cost savings. Electric utilities have been expected to include demand-side management in the development of long-range planning, including load management, conservation, peak shaving and strategic load building and load shifting. Typically these measures include incentives for participants and/or the utility.

Derating: A situation in which electric generating equipment is capable of operating, but not at full capacity, due to an unplanned failure or scheduled maintenance. (Also see Outage.)

Desert Southwest: The area of Arizona, New Mexico, Utah, Nevada, and Western Texas.

Direct Access: The ability of a retail customer to purchase commodity electricity directly from the wholesale market rather than soley through a local distribution utility.

Direct Assignment (DA): The beneficiary of an investment pays the cost.

Direct Assignment of Facilities are facilities that are constructed for an individual utility. Costs for that facility are paid for by the utility for which the facility is directly assigned.

Direct Control Load Management: The magnitude of customer demand that can be interrupted at the time of the Council or Reporting Party seasonal peak via direct control of the System Operator by interrupting power supply to individual appliances or equipment on customer premises. This type of control usually reduces the demand of residential customers. Direct Control Load Management does not include Interruptible Demand.

Direct Current (DC): Electricity flowing continuously in one direction. (See Alternating Current.)

Direct Service Industries (DSIs)**:** Industries, primarily aluminum smelters, that buy great quantities of electricity directly from BPA.

Disco: An electric distribution company that does not own generation or transmission facilities.

Dispatch: The physical inclusion of a generator's output onto the transmission grid by an authorized scheduling utility.

Dispatching: The process of assigning generation and transmission of electricity through a system.

Distributed Generation: Any small-scale power generation technology that provides electric power at a site closer to customers than central station generation It is usually interconnected to the transmission or distribution system. Residential-size fuels cells and microturbines powered by natural gas or other commonly available fuels are examples. While expensive today, these resources are becoming more and more competitive.

Distribution: Local facilities used to deliver power at low voltages to consumers within a utility's service area. Distribution is distinguishable from transmission, which refers to the transfer of large quantities of electric power at high voltages between utilities or regions.

Environmental assessment (EA)**:** of the impact of an action to be taken by a federal agency. It is a less demanding assessment than an EIS. Both are requirements of NEPA.

Edison Electric Institute (EEI): An association representing electric utilities. 701 Pennsylvania Avenue NW, Washington, DC 20004-2696 202-508-5000. Web address: www.eei.org

Electric Power Research Institute (EPRI): Research program founded in 1972 by electric utilities to improve electric production, distribution and use. 3412 Hillview Ave., Palo Alto, CA 95303. 415-855-2000. Web address: www.epri.com

Electric Utility: A corporation, person, agency, authority, or other legal entity or instrumentality that owns and/or operates facilities within the United States, its territories, or Puerto Rico for the generation, transmission, distribution, or sale of electric energy primarily for use by the public and files forms listed in the Code of Federal Regulations, Title 18, Part 141. Facilities that qualify as co-generators or small power producers under the Public Utility Regulatory Policies Act (PURPA) are not considered electric utilities.

Electrical Energy: The generation or use of electric power over a period, usually expressed in megawatt hours (mwh), kilowatt hours (KWh) or gigawatt hours (GWh), as opposed to electric capacity, which is measured in kilowatts.

Electricity Consumers Resource Council (ELCON): Association of 33 large industrial electric consumers, representing over 6% of total U.S. demand. 1333 H St. NW, 8th Floor, West Tower, Washington, DC 20005. (202) 682-1390. Web address: www.elcon.org

Embedded Cost: Money previously spent that can't be recovered by abandoning a project. Also called "sunk costs."

Energy Information Administration (EIA): Statistical information collection and analysis branch of the Department of Energy. Forrestal Building, Room 1F-048, Washington DC 20585 (202) 586-8800. Web address: www.eia.doe.gov

Energy Policy Act: Enacted in 1992 authorizing FERC to order wholesale wheeling of electricity while explicitly restraining its power to order retail wheeling. EPAct also created a new legal category of electricity generating and sales companies called the Exempt Wholesale Generator (EWG), free from PUHCA restrictions.

Energy Star: A voluntary labeling program unveiled by the U.S. Environmental Protection Agency in 1992 designed to identify and promote energy-efficient products in order to lower carbon dioxide emissions. The EPA teamed up with the Department of Energy in 1996 to advance the Energy Star label.

Enforcement Task Force of the Federal Energy Regulatory Commission (the "FERC Hot Line"): Inter-agency group set up to handle industry complaints about unfair practices in both the gas and electric industries. 9th Floor, 888 First Street NE, Washington, DC 20426 (202) 208-1390 or 208-0098.

Environmental Impact Statement **(EIS):** A thorough review of how a proposed project, such as a transmission line, will affect the environment. EISs are required by NEPA for federal agencies.

Environmental Protection Agency: A federal agency created in 1970 to combine into one agency a number of federal research, monitoring, standard-setting and enforcement actions related to protecting the environment. Ariel Rios Building, 1200 Pennsylvania Ave., NW, Washington, DC 20460 (202) 260-2090. Web address: www.epa.gov

Ex Parte: According to the Administrative Procedure Act of 1988, (5 U.S.C. §§551-559) *ex parte* communication is a "communication not on the public record with respect to which reasonable prior notice to all parties is not given." The rules were designed to assure that all parties in a case have an equal opportunity to present their views to decision makers. Ex Parte communications "relevant to the merits" of a contested proceeding are prohibited.

Export Tariffs: Charges placed on any transactions where power is exiting the system.

Extra High Voltage (EHV): Any electric voltage of 345,000 volts or higher.

FCRPS: Federal Columbia River Power System. This is formal name for the federal system of hydroelectric projects operated by the U.S. Army Corps of Engineers and the Bureau of Reclamation, the power acquired by BPA from other suppliers by contract and transmission facilities operated by BPA.

FCRTS: Federal Columbia River Transmission System, which is the transmission facilities owned and operated by BPA.

Federal Energy Regulatory Commission (FERC): A federal agency created in 1977 to regulate, among other things, interstate wholesale sales and transportation of gas and electricity at "just and reasonable" rates. Formerly the Federal Power Commission. 888 First Street NE, Washington, DC 20426 (202) 208-0200. Web address: www.ferc.fed.us

Federal Power Act: The primary statute governing FERC regulation of electric utilities, the Federal Power Act, enacted in 1935, established guidelines for federal regulation of electric sales in interstate commerce.

Federal Power Commission: The predecessor to FERC, created in 1920 and phased out in 1977 with the creation of the Department of Energy and FERC.

FERC Hot Line: (See Enforcement Task Force.)

FERC Order 2000: The order requiring investor-owned utilities to participate in creation of regional transmission organizations. (See Order 2000.)

FERC Order 888: Requires jurisdictional utilities (those under FERC regulation for interstate, wholesale electricity commerce) to separate their power marketing operations from their transmission operations. (See Order 888.)

Filing Utilities: The utilities that are jointly submitting a filing to FERC describing the proposed RTO. Filing Utilities for RTO West are: Avista, BPA, BC Hydro, Idaho Power, NorthWestern Energy, PacifiCorp, Portland General Electric, Puget Sound Energy, Nevada Power and Sierra Pacific

Financial Accounting Standards Board (FASB): An independent board that determines accounting principles and standards. Its interpretations become the generally accepted accounting principles.

Firm Power: Electric power or capacity intended to be available at all times during a pre-defined period, even under adverse conditions, but subject to force majeure interruptions, such as blackouts, earthquakes or severe weather. The amount of firm power a hydro system can produce is determined using Critical Water assumptions.

Firm Transmission Right (FTR): Tradable rights to be relieved of charges under the RTO Tariff for the recovery of costs incurred by the RTO for clearing congestion. An FTR is an entitlement to schedule 1 mw for use of a flowpath in a particular direction for a particular hour. The RTO will make FTRs available for sale by determining entitlements under Pre-Existing Contracts and Load Service Obligations and by conducting a series of auctions.

Firm Transmission: Transmission service that may not be interrupted for any reason except during an emergency when continued delivery of power is not possible.

Flexible Load Shape: Designing electric load based on varying degrees of reliability. Interruptible loads, pooled or integrated management or individual control devices that impose service constraints can all be used to shape load.

Forced Outage: Shutdown of a generating unit, transmission line or other facility for emergency reasons. Forced outage reserves consist of peak generating capability available to serve loads during forced outages.

Formula Power Transmission (FPT): A pre-Order 888 distance-based BPA transmission service or contract type.

Frequency: The oscillatory rate in Hertz (cycles per second) of the alternating current: 60 Hz in the U.S. and 50 Hz in Europe.

Fuel Cells: One or more cells capable of generating an electrical current by converting the chemical energy of a fuel directly into electrical energy. Several different kinds of reactions are being developed: phosphoric acid, proton exchange membrane (or solid polymer), molton carbonate, solid oxide alkaline and direct methanol.

Fuel Switching: Switching from one fuel, such as hydropower or coal, to another, such as natural gas.

Gas Turbine: Typically consists of an axial-flow air compressor, one or more combustion chambers, where liquid or gaseous fuel is burned and the hot gases are passed to the turbine and where the hot gases expand to drive the generator and are then used to run the compressor.

General Transfer Agreement (GTA): General term for agreement between BPA and third party to serve a BPA customer within that utilities' control area.

Generating Plant: Facility that creates electricity.

Generation Company (Genco): A company that generates power but does not own any transmission.

Generation Control Center (**GCC):** A 7 day per week, 24 hr. per day operations center maintained by a scheduling entity which schedules energy and/or ancillary services capacity into, out of, or through an RTO grid.

Geographic Information Systems (GIS): A computer-based system that stores, integrates and analyzes information about land. Originally developed by theoreticians in the 1960s to help the Canadian government manage natural resource and environmental information, GIS is now used commercially to perform automated mapping of pipeline right-of-way, compressor stations and other information about utility facilities.

Geothermal Plant: A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam that derives its energy from heat found in rocks or fluids at various depths beneath the surface of the earth. The energy is extracted by drilling and/or pumping.

Giga-NOPR: A slang term for FERC's Notice of Proposed Rulemaking in the electric power industry to implement full open access of the electric transmission system. [Docket No. RM 95-8-000]. The Giga-NOPR led to Order 888.

Good Utility Practice (**GUP):** A term (also known as "prudent utility practice" in some arenas) describing any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry which, based on available facts and in the exercise of reasonable judgment at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition.

Grandfather Clause: The continuation of a former rule, clause or policy where a change to a new rule would be unfair to parties with continuing operations.

Green Power: A term usually used to mean power produced from a renewable resource such as wind, solar, geothermal, biomass or small hydro. Most of BPA's hydroelectric power is not considered green because salmon are injured in passing federal projects. BPA sells a power product, mostly wind generated, that has been endorsed as environmentally preferred power by an independent group of environmental organizations.

Grid: Layout of the electrical transmission system – a network of transmission lines and the associated substations and other equipment required to move power. The BPA Grid consists of about 15,000 circuit miles of transmission lines.

Heavy Load Hours (**HLH):** The peak energy usage period; Monday through Saturday, 6A-10P

Hedging: A method by which a purchaser or producer of natural gas or electricity uses a derivative position to protect against adverse price movements in the cash market by "locking in" a price for future delivery.

High Voltage Lines are used to transmit power between utilities. The definition of "high" varies, but it is opposed to "low" voltage lines that deliver power to homes and most businesses.

Horsepower (hp): Unit of power equal to 746 watts.

Host Control Area (HCA): (1) An electric control area that confirms and implements scheduled interchange for a transmission customer that operates generation or serves customers directly within the control area's metered boundaries. (2) The control area within whose metered boundaries a commonly owned unit or terminal is physically located.

Hour Ending (**HE)**: Used in transmission and power scheduling to identify an hour on the 24-hour clock

Hub: A geographic location where multiple participants trade services.

Hydroelectric Plant: A facility in which falling water drives the plant's turbine generators.

Imbalance: Discrepancy between the amount a shipper contracted to use or transport, and actual volumes used or transported. Shippers may be forced to pay an imbalance penalty for variances greater than a certain percentage. Marketers sometimes take responsibility to balance load so their customers can avoid penalties.

Inadvertent Interchange: The accumulated difference between the electrical control area's net actual interchange and net scheduled interchange.

Incentive Ratemaking: A relatively new theory of ratemaking that would allow a regulated entity to set market-based rates for transmission. Incentive rates give regulated companies an incentive to keep overhead costs low by allowing them to make a profit on their services not tied to rates of return. But essential to the formula is the existence of sufficient competition in the marketplace to keep utility prices reasonable.

Incremental Rates: The allocation of cost for an additional service or construction project directly to those who benefit from the service instead of rolling it into overall rates. To determine the incremental unit cost, the added cost is divided by the added capacity or output. (See Rolled-in Pricing.)

IndeGO: A proposal for an independent grid operator that would have covered the Pacific Northwest region – Washington, Oregon, Idaho, Montana, Wyoming, Utah, Colorado and most of Nevada. Supporters announced its demise in March, 1998, due to irreconcilable differences between members. Many of the study papers from IndeGO were used by the RTO-West work groups in developing the RTO West proposal.

Independent Grid Operator (IGO): One form of a regional transmission organization that would be limited to operating the Grid rather than owning and operating the regional transmission system.

Independent Power Producer (IPP): Wholesale electric producer unaffiliated with the franchised utility in the area in which it is selling power. Now generally known as an Exempt Wholesale Generator (EWG).

Independent System Operator (ISO): Entity that controls and administers non-discriminatory access to electric transmission in a region or across several systems, independent from the owners of the facilities.

In-Lieu Energy: Energy exchanged between a reservoir owner and a downstream project. The agreement allows reservoir owners to retain water above a reservoir's energy content curve, but the downstream project may request release of such water. The upstream project must then release the water or provide an amount of energy that would be equal to the downstream production had the water been released.

Integration of Resources (IR**):** A pre-Order 888 contract-demand BPA transmission contract.

Interchange (or Transfer): The exchange of electric power between control areas.

Interconnected Operations Services (IOS): Services transmission providers may offer voluntarily to a transmission customer under FERC Order 888 in addition to ancillary services. These include services for backup supply, dynamic scheduling, real power loss and restoration.

Interconnection: A specific connection between one utility to another. NERC's definition: "When capitalized, anyone of the four bulk electric system networks in North America: Eastern, Western, ERCOT and Quebec. When not capitalized, the facilities that connect two systems or control areas."

Interconnection-wide: The geographic area encompassing all interconnected transmission facilities in the Western Interconnected Grid.

Intermediate Load: The range from base load to a point between base load and peak. This may be the midpoint, a percent of the peak load, or the load over a specified time period.

Interruptible Demand: The magnitude of customer demand that, in accordance with contractual arrangements, can be interrupted at the time of the Councilor Reporting Party seasonal peak by direct control of the System Operator or by action of the customer at the direct request of the System Operator. In some instances the demand reduction may be effected by direct action of the System Operator (remote tripping) after notice to the customer in accordance with contractual provisions. For example, demands that can be interrupted to fulfill planning or operating reserve requirements normally should be reported as Interruptible Demand. Interruptible Demand does not include direct control load management.

Interstate Compacts: Agreements authorized by the U.S. Constitution and are sometimes used to address interstate problems such as the regulation of shared water resources.

Intertie: Usually refers to very high voltage lines that carry electric power large distances. BPA has interties, for example, that connect FCRPS to Canada and the FCRPS to California. A term also used to describe a circuit connecting two or more Control Areas or systems of an electric system (also called "tie line.")

Investor Owned Utility (IOU): Utilities financed by the sale of securities. IOUs are jurisdictional utilities.

ISO New England Inc.: Joined by six transmission owning companies in filing a joint petition with FERC in January, 2001, seeking a declaratory order to form the New England RTO.

Joint Use Facilities: A facility that is used in common by two or more entities or power generating units. Also known as Common Use Facilities.

Jurisdictional Utilities: Utilities and other entities subject to FERC regulation pursuant to the Federal Power Act. These are investor-owned electric utilities, marketers, and brokers. These do not include federal agencies such as BPA, publicly owned utilities or consumer-owned cooperatives.

Kilovolt (kV): Electrical potential equal to 1,000 volts.

Kilowatt (kw) is a unit to measure the rate at which electric power is being consumed. One kilowatt equals 1,000 watts.

Kilowatt-hour (kwh): The basic unit for pricing electric energy; equal to one kilowatt of power supplied continuously for one hour. (Or the amount of electricity needed to light ten 100-watt light bulbs for one hour.) One-kilowatt hour equals 1,000 watt hours.

Light Load Hours (LLH): Non-peak hours; non-HLH hours; (M-Sa, 10P-6A and all day Su)

Line Losses: Power lost in transmission and distribution measured in kwh and kw, as opposed to system losses or the net difference between energy input and output in an entire delivery system.

Liquidity: A market is said to be "liquid" when it has a high level of trading activity and open interest.

Load Balancing: Meeting fluctuations in demand; or matching generation to load to keep the electrical system in balance.

Load Curve: A curve on a chart showing power (kilowatts) supplied, plotted against time of occurrence and illustrating the varying magnitude of the load during the period covered.

Load Duration Curve: A curve of loads, plotted in descending order of magnitude, against time intervals for a specified period. The curve indicates the period of time load was above certain magnitude. Load duration curves are profiles of system demand that can be drawn for a period of time (daily, monthly, yearly).

Load Forecast: An attempt to determine energy consumption at a future point in time.

Load Management: Economic reduction of electric energy demand during a utility's peak generating periods. Load management differs from conservation in that load management strategies are designed either to reduce or shift demand from on-peak to off-peak times, while conservation strategies may primarily reduce usage over the entire 24-hour period.

Load Profiling: The process of examining a consumer's energy usage in order to gauge the level of power being consumed and at what times during the day.

Load Serving Entity (LSE): Any entity providing service to load.

Load Shape: Variation in the magnitude of the power load over a daily, weekly or yearly period.

Load Shedding: The process of deliberately removing (either manually or automatically) pre-selected demands from a power system, in response to an abnormal condition (such as very high load), to maintain the integrity of the system.

Load Shifting: Shifting load from peak to off-peak periods, including use of storage water heating, storage space heating, cool storage, and customer load shifts.

Load: The amount of power demanded by consumers. It is synonymous with Demand.

Locational Marginal Pricing (LMP): Pricing mechanism for electricity to deal with transmission congestion being implemented by the PJM ISO, promoted by William Hogan of Harvard University. Under LMP, the price of energy at any location in a network is equal to the marginal cost of supplying an increment of load at that location. Also called by different names, such as Locational Based Marginal Pricing (LBMP) by the member systems of the New York Power Pool. New Zealand also uses this system.

Loop Flow: The unscheduled use of another utility's transmission resulting from movement of electricity along multiple paths in a grid, whereby power, in taking a path of least resistance, might be physically delivered through any of a number of possible paths that are not easily controlled.

Loop: An electrical circuit that provides two sources of power in such a way that, should one source fail, the remaining source continues to provide power.

Loss Supply: A service where the wheeling utility provides supplemental electric power to compensate for losses incurred in the power system during transmission.

Major Electric Utility: Beginning in 1984, the FERC defined a "major" electric utility as one whose sales or transmission exceed one of the following factors in each of the three previous consecutive years: 1,000,000 megawatt hours of total annual sales; 100 megawatt hours of annual sales for resale; 500 megawatt hours of annual gross interchange out; or 500 megawatt hours of wheeling for others. A "non-major" electric utility fails this test, but still has sales of 10,000 megawatt hours or more in the previous calendar year. Companies with sales below the 10,000 megawatt hour level are exempt from FERC reporting requirements.

Market Clearing Price: Price determined by the convergence of buyers and sellers in a free market.

Market Interface refers to the impact of reliability (planning and operating) standards, practices and procedures on the commercial electricity market and the impact of electricity market practices on electric system reliability.

Market Power: The ability of a company to maintain prices above competitive levels for a significant period of time. An applicant requesting FERC approval of market-based rates is required to show that it lacks significant market power in the relevant markets.

Market Power Analysis: A FERC analysis of the relevant product and geographic markets in which an applicant sells specific products or services, to determine whether the applicant has market power. The aim is to determine whether there is sufficient ease of entry to newcomers and competitors, and good alternatives to the applicant's products and services. "Good alternative" is defined as one that is available soon enough, has a price low enough, quality high enough and quantity plentiful enough to permit customers to substitute the alternative for the applicant's services.

Market-based Price: The price of power on the open market

Marketers: Unlike Brokers, marketers take title to power in anticipation of selling it at a higher price to a buyer. Marketers are subject to FERC regulation.

Material Adverse Impact: Examples of actions or events having material external impacts are those:

- that are likely to reduce the reliability of other systems in the interconnection
that have the effect of limiting access to transmission capacity to other regions
- which would adversely impact the path ratings or operating limits of the transmission system in other control areas.
- that require an external system to increase operating or capital costs to compensate for the impacts
- that significantly impair the economic efficiency of the WIO-wide energy market.

Material External Impacts: Significant effects on another regional entity or market in the interconnection outside of the regional entity or market adopting a policy, standard, practice or procedure, or implementing the action. The existence of a Material External Impact may trigger the exercise of backstop authority.

Megawatt (mw): One megawatt equals one million watts or 1,000 kilowatts.

Megawatt hour (mwh): One-megawatt hour equals one thousand kilowatt hours.

Megawatt-mile Rate: An electric transmission rate based on distance, as opposed to postage stamp rates, which are based on zones.

Megawatt-year and **Megawatt-month:** Units to measure and price transmission services. A megawatt-year is one megawatt of transmission capacity made available for one year. Similarly, a megawatt-month is one megawatt of transmission capacity made available for one month.

Merchant Plant: An electric generating facility not owned by a regulated utility, that sells energy to the open market.

MID-C: Mid-Columbia utilities; generally thought of as Chelan, Grant, and Douglas PUDs.

Midwest ISO: Filed plans at FERC in January, 1998, with nine utilities, later adding several companies. It now covers portions of Indiana, Illinois, Ohio, Michigan, Kentucky, Missouri, Virginia, West Virginia and Wisconsin. Three of its utility members, Illinois Power, Commonwealth Edison, and Ameren, are in the process of exiting the Midwest ISO and joining the Alliance RTO.

Municipal System (Muni): An electric utility owned and operated by a municipality.

Must Run Units: A specific generating unit that must be on line or on the grid to ensure reliability or satisfy other operating constraints, even if the unit's incremental cost is higher than other units available in the system or power pool.

National Association of Regulatory Utility Commissioners (NARUC): Group composed of federal and state regulators. P.O. Box 684, Washington, D.C. 20044-0684 (202) 898-2200. Web address: www.naruc.org

National Energy Board (NEB): The Canadian regulatory body that oversees inter-provincial natural gas trade and pipelines. 311 6th Avenue SW, Calgary, Alberta, CANADA T2P 3H2 (403) 292-4800.

National Environmental Policy Act (NEPA)**:** The 1969 act requires that federally funded projects must be evaluated to see what their impact will be on the environment. (See Comprehensive National Energy Policy Act.)

National Rural Electric Cooperative Association (NRECA): An association that represents the interests of consumer owned cooperative electric utilities and the consumers they serve. 0 430 Wilson Blvd., Arlington, VA. 22203-1860. (703) 907-5500. Web address: www.nreca.org

Native Load Customers: Utility customers located within a utility's franchised service territory.

Net Billing : In general, offsetting payments due to one party against payments due the other party.

Net Capacity: The maximum capacity (or effective rating), modified for ambient limitations, that a generating unit, power plant, or electric system can sustain over a specified period of time, less the capacity used to supply the demand of station service or auxiliary needs (such as fan motors, pump motors, and other equipment essential to operation of the generating units).

Net Energy for Load: The electrical energy requirements of an electric system, defined as system net generation plus energy received from other's less energy delivered to others through interchange. It includes system losses but excludes energy required for storage at energy storage facilities.

Net Generating Station Capability: The capacity of a generating station to produce power, less the amount it uses for auxiliary services and other station uses. This amount can vary by time of year and other factors.

Network : A system of transmission or distribution lines cross-connected to permit multiple supplies to enter the system.

Network Integration Transmission Service: Service that allows an electric transmission customer to integrate, plan, economically dispatch and regulate its network reserves in a manner comparable to that in which the transmission provider uses its transmission system to serve native load customers. NITS may also be used to deliver non-firm energy purchases to its network load without additional charge.

Network Transmission (NT): A transmission contract or service as described in a transmission provider's Open Access Transmission Tariff

New York ISO: The New York's Power Pool's ISO includes all of that state's major utilities.

Nitrogen Supersaturation: When large quantities of water are spilled at dams concentrating nitrogen dissolved in the water. The high levels of nitrogen can harm smolts (juvenile fish or define smolt).

NOB: Nevada-Oregon Border (used when referring to the PDCI)

Nominal Voltage: Voltage standards recommended by manufactures of electric equipment.

Non-coincident Peak Demand or Non-coincident Peak Load: A customer's maximum electric demand during any stated period.

Nonfirm Power: Electric power a hydro system can produce beyond Firm Power. Basically, it is the extra power the system can produce in a time when water supply is above Critical Water.

Nonfirm Transmission: Transmission service that may be interrupted in favor of Firm Transmission schedules or for other reasons.

Non-jurisdictional: Generally defined as power or transmission activity that is not regulated by the Federal Energy Regulatory Commission.

Nonprofit Corporation: A business organized under state law, that has no stockholders and would not pay profits. Typically, it is led by a board of directors or trustees chosen by the Corporation's members. All financing would be with debt.

Non-spinning Reserve: Generating components that are not connected to the system but are capable of coming on line within a specified time, or interruptible load that can be removed from the system in a specified time.

Non-Utility Generator (NUG): Facility for generating electricity that is not exclusively or primarily owned by an electric utility (less than 50% utility ownership). A generic term that includes qualifying facilities (QFs), independent power producers (IPPs) and exempt wholesale generators (EWGs).

North American Electric Reliability Council (NERC): Formed in 1968 to promote the reliability of generation and transmission in the electric utility industry. Consists of 10 Regional Reliability Councils and one affiliate encompassing all the electric systems in the U.S., Canada and northern part of Baja, Mexico:

- East Central Area Reliability Coordination Agreement (ECAR)
- Electric Reliability Council of Texas (ERCOT)
- Florida Reliability Coordinating Council (FRCC)
- Mid-Atlantic Area Council (MAAC)
- Mid-America Interconnected Network (MAIN)
- Mid-Continent Area Power Pool (MAPP)
- Norteast Power Coordinating Council (NPCC)
- Southeastern Electric Reliability Council (SERC)
- Southwest Power Pool (SWPP)
- Western Systems Coordinating Council (WSCC)

Princeton Forrestal Village, 116-390 Village Blvd., Princeton, NJ 08540-5731. (609) 452-8060. Web address: www.nerc.com

Northwest (or Pacific Northwest): For energy purposes, usually means Oregon, Washington, Idaho and Montana west of the continental divide as well as areas within 75 air miles of these boundaries, excluding Canada. Thus, it includes small portions of Wyoming, Nevada, California and Utah.

Northwest Regional Transmission Association (NRTA): Voluntary organization of transmission providers, U.S. and Canadian transmission users and Northwest regulatory commissions. 26 SW Salmon St., Suite 400, Portland, OR 97204. Web address: www.nrta.org

Notice of Proposed Rulemaking (NOPR): A proposal by the FERC to change its rules. Sometimes proceeded by a Notice of Inquiry. A NOPR normally calls for comments from all interested parties and, in some cases, reply comments and/or public hearings. A NOPR may or may not result in a final rule.

OASIS (Open-Access Same- Time Information System): An electronic posting system for transmission access data that allows all customers to view the data simultaneously. Formerly called Real-Time Information Networks, this is a basic electronic service that FERC says each public utility (or its agent) that owns, controls or operates facilities used for the transmission of electric energy in interstate commerce must create or participate in. The system must be designed to provide existing or potential open-access transmission customers with information about available transmission capacity, prices, and other information that will enable them to obtain open-access non-discriminatory transmission service.

Obligation To Serve: Under a traditional regulatory model, an electric utility's duty to offer service on a non-discriminatory basis to any customer that requests that service. However, the tradeoff is that the customer in question must agree to rates established by the utility.

Open Transmission Access: Transmission is offered equally to all interested parties.

Order 2000: A December 1999 order in which the Federal Energy Regulatory Commission said that it expects transmission owners to join regional transmission organizations (RTOs) on a voluntary basis. The order required all public utilities that own, operate or control interstate transmission to file by October *15, 2000,* a proposal for an RTO. In the absence of an RTO proposal, the order asks for, among other things, a description of any moves made by the utility to participate in an RTO, the reasons for not taking part in the process and any barriers to participation. FERC expected to have the voluntary RTOs operational by December 15,2001.

Order 888: Final Rule requiring all public utilities that own, control or operate facilities used for transmitting electric energy in interstate commerce to have on file at FERC open access non-discriminatory transmission tariffs that contain minimum terms and conditions of non-discriminatory service. It allows these companies to seek recovery of legitimate, prudent and verifiable stranded costs associated with providing open access. Issued April 24, 1996.

Order 889: Final rule establishing and governing an OASIS, and prescribing standards of conduct for transmission providers. Issued April 24, 1996.

Outage: Removal of generating capacity from service, either forced or schedule. (Also see Derating.)

Pacific Northwest Coordination Agreement (PNCA): An agreement between federal and non-federal owners of hydroelectric generation on the Columbia River system, which resulted from the 1964 Columbia River Treaty. The PNCA governs the release of stored water to obtain the maximum usable energy and directs operations of the major generating facilities as if they belonged to a single owner.

Pancaking: Fees that are tacked on as electricity flows through a number of transmission systems.

Parallel Path Flows: The difference between the scheduled and actual power flow, assuming zero inadvertent interchange, on a given transmission path. Synonyms: Loop Flows, Unscheduled Power Flows, and Circulating Power Flows.

PDCI is Pacific DC Intertie (BPA's 846-mile Pacific high-voltage direct-current electrical link to Los Angeles)

Peak Demand: The highest electric requirement including losses experienced by a bulk electric system in a given period (e.g., a day, month, season or year). It is equal to the sum of the metered (net) power outputs of all generators within a system and the metered line flows into the system, less the metered line flows out of the system. Thus, actual peak demand is the maximum (usually hourly integrated) demand of all customer demands plus losses. Usually expressed in mw.

Peaking Unit: A generator that is used by utilities when a baseload unit is unable to adequately meet peak load demands. Peaking units are set up to produce power with little advance warning and for fairly short time frames.

PEC is Pre-Existing Contract(s) and Obligation(s) (where pre-existing refers to being in effect prior to the establishment of an RTO)

Performance-Based Regulation: Rates designed to encourage market responsiveness. They can be automatically adjusted from an initial cost-of-service rate based on a company's performance. This is measured by evaluating investment decisions, success (or failure) of constraining operating costs, expanding throughput, customer satisfaction and improving service. Rewards and costs over or under a certain target band may be shared by customers and stockholders in a prescribed proportion.

Phase Shifting Transformer (or phase shifter): Equipment used on the electric transmission system that can shift where power flows. It can redirect unwanted parallel flows or optimize the transfer capabilities of a network.

Plant Use Electricity: The electric capacity and energy used in the operation of a plant. Commonly referred to as plant auxiliary load.

Point of Delivery: The physical point of connection between the transmission provider and a utility. Power is metered here to determine the cost of the transmission service.

Point-to-Point Transmission Service: The reservation and/or transmission of energy on either a firm basis and/or a non-firm basis from point(s) of receipt to point(s) of delivery under a tariff, including any ancillary services that are provided by the transmission provider.

Postage Stamp Rates: Flat rates charged for transmission service without regard to distance.

Power Exchange (PX): An institution that facilitates electricity trading of various electricity products by disseminating price and quantity data regarding offers to sell and requests to buy .

Power Marketer: Business entities engaged in buying and selling electricity, but which do not own generating or transmission facilities. Power marketers, as opposed to brokers, take ownership of the electricity and are involved in interstate trade. These entities file with FERC for status as a power marketer.

Power Marketing Administrations (PMAs): Congress established Federal agencies under the Department of Energy that sell wholesale power generated at federal facilities. These PMAs and their headquarters are:

- Bonneville Power Administration (BPA), Portland, Ore.
- Western Area Power Administration (WAPA), Golden, Colo.
- Southeastern Power Administration (SEPA), Elberton, Ga.
- Southwestern Power Administration (SWPA), Tulsa, Okla.

Power Pool: Two or more interconnected electric systems planned and operated to supply power in the most reliable and economical manner for their combined load requirements and maintenance programs.

Power: The time rate of generating, transferring or using electric energy, usually expressed in kilowatts (kw).

Preference Power: Power sold by a federal marketing agency, such as the Bonneville Power Administration, under statutes that give certain customers a priority preference in buying power. The primary source of this power is usually a federal hydroelectric project.

Provider of Last Resort: When a customer is either unable to find a power supplier that is willing to serve it or the customer does not select another power supplier, utilities are legally obligated to serve .

Public Power Council (PPC): Represents and advocates the common legal and technical interests of the Northwest's consumer-owned utilities.

Public Utility (Service) Commission: State commissions that regulate the activities of intrastate electric transmission and distribution, as well as gas, telephone and water utilities.

Public Utility Holding Company Act (PUHCA): Legislation enacted in 1935 to protect utility stockholders and consumers from financial and economic abuses of utility holding companies. Generally, ownership of 10% or more of the voting securities of a public utility subjects a company to extensive regulation under the Securities and Exchange Commission. The Comprehensive National Energy Policy Act of 1992 opened up the power market by granting a class of independent power producers exempt from PUHCA regulation.

Public Utility Regulatory Policies Act (PURPA): One of five bills signed into law on Nov. 8, 1978 as the National Energy Act. PURPA created various incentives for the development of cogeneration facilities that met certain qualifying tests (qualifying facilities or QF's) including the requirement that utilities purchase power generated by QF's at the utilities' "full avoided cost." Sections 211 and 212 were added to the Federal Power Act, vesting FERC with certain powers to order transmission or "wheeling" of electric power under limited circumstances.

Publicly Owned Utilities: Publicly-owned utility systems such as municipal utilities (Eugene Water and Electric Board, for example). Another form of publicly owned utility is called a people's utility district in Oregon (Emerald P.U.D., for example) and a public utility district in Washington (Clark County P.U.D., for example).

Pumped Hydroelectric Storage (Pumped Storage): Large-scale electric storage is commercially available through pumped storage. Electricity produced during low demand is used to pump water into a reservoir. During high demand the water is released to operate hydroelectric generators to produce electricity. Pumped storage returns about two-thirds to three-fourths of the electricity put into it.

Qualifying Facility (QF): A facility that qualifies under PURPA.

Radial: An electric transmission or distribution system that is not networked and does not provide sources of power.

Ramp Rate: The rate, expressed in megawatts per minute, at which the interchange schedule is attained during the ramp period (the time between ramp start and end times, usually expressed in minutes). A ramp is the time it takes to gear up from a zero start to the amount scheduled for transfer.

Rate Base: The investment value established by a regulatory authority upon which a utility is permitted to earn a specified rate of return.

Reactive Power: The out-of-phase component of the total voltamperes in an electric circuit, usually expressed in var (voltamperes reactive). It represents the power involved in the electric fields developed when transmitting alternating-current power (the alternating exchange of stored inductive and capacitive energies in a circuit). Used to control voltage on the transmission network, particularly the power flow incapable of performing real work or energy transfer.

Real Power: Portion of the electrical flow capable of performing real work or energy transfer. Expressed in megawatts.

Real Time Pricing: Time of day pricing in which customers receive frequent signals on the cost of consuming electricity at that moment.

Record of decision (ROD): A document that tells the public of the decision a federal agency has made and the grounds for the decision according to requirements established by NEPA.

Regional Entity (RE): A regional entity may be an RTO, some other formally or informally constituted regional organization or group within the Western Interconnection, control area or control areas acting in concert. At the time of the formation of the WIO, regions will define their boundaries and establish formal or informal coordination as necessary. These boundaries can be reevaluated or modified over time.

Regional Representative Group (RRG): A group of Northwest stakeholders that oversees the development of RTO West and helps direct the activities of the RTO-West development process workgroups.

Regional Transmission Group (RTG): Voluntary organization of transmission owners, transmission users, and other entities interested in coordinating transmission planning, expansion and use on a regional and interregional basis. FERC issued a policy statement encouraging their development and providing guidance on forming RTG agreements in July, 1993.

Regional Transmission Organization (RTO): An independent regional transmission operator and service provider that meets certain criteria, including those related to independence and market size, established by FERC Order 2000.

Regionalization: A term used to describe efforts aimed at preserving the benefits of Northwest resources for the people of that region.

Reliability Practices: The methods of implementing policies and standards designed to ensure the adequacy and security of the Western interconnected electric transmission system in accordance with applicable reliability criteria (i.e. NERC, WIO, local Regional Entity criteria).

Reliability: Term used to describe a utility's ability to deliver an uninterrupted stream of energy to its customers and how well the utility's system can handle an unexpected shock that may effect generation, transmission or distribution service.

Remedial Action Scheme (RAS): Protective systems that utilize a combination of conventional relays, computer-based processors, and telecommunications to accomplish rapid, automated response to unplanned system events.

Renewable Resources (Renewables) Wind, solar (photovoltaic), biomass, geothermal and hydro-generated electricity. Energy resources that are naturally replenishable, but typically flow limited.

Reserve Margin: The amount of unused available capacity for a utility system, expressed as a percentage of peak demand.

Restructuring: The splitting apart of a utility's generation, transmission and distribution services into separate, stand-alone businesses, so as to give customers greater freedom in selecting their power sources.

Retail Competition: A system under which more than one electricity provider can sell to retail customers, and retail customers are allowed to buy from more than one provider. (See also Direct Access.)

Retail Wheeling: The transmission of power from another utility or a non-utility generator to an end-user site, over the local utility's lines. Retail wheeling has been advocated by big industrials and bitterly fought by utilities, and is at the heart of the current deregulation debate, in which most utilities want to limit competition to the wholesale level.

Revenue Requirement: 1) The amount of revenue a utility must take in to cover the sum of its estimated operation and maintenance expenses, and debt service and coverage. 2) At BPA, the lowest amount of revenues necessary to recover the projected annual expenses of the Federal Columbia River Power System and the planned net revenues that ensure coverage of planned amortization payments and meet financial objectives.

Right-of-Way: Strip of land used for utility lines. Most utilities negotiate easements with property owners, or use the right of eminent domain to gain access. In some cases the land is purchased outright.

Run-of-River Plant: A hydroelectric facility that uses the flow of a stream for generation behind a dam without the capacity to store water.

Schedule: An agreed-upon transaction size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and energy between the contracting parties and the Control Area(s) involved in the transaction.

Scheduled Outage: Scheduled outages occur when a portion of a power system is shut down intentionally, typically to allow for pre-planned activities such as maintenance.

Seams: The interface between Regional Entities and/or markets at which Material External Impacts may occur. The Regional Entities' actions may have reliability, market interface, and/or commercial impacts (some or all).

Secondary Market: The market for transportation capacity not being used by firm capacity holders.

Section 211 Filing: Section 211 of the Federal Power Act, strengthened by EPAct, allowed FERC to order non-discriminatory transmission service on existing electric utility lines by other parties if requested. Section 211 filings helped prompt FERC to extend open access for electricity in a broader rule (later becoming Order 888).

Self-Generation: A generator that is designated for use by a specific retail customer. The facility is typically placed on-site for the customer.

Service Territory: Physical area served by a utility.

Sherman Act: The basic federal antitrust law. Enacted in 1890, it very broadly prohibits unreasonable restraints of trade, including price fixing, monopolies, and attempts and conspiracies to create monopolies.

Southwest Regional Transmission Association (SWRTA): Voluntary organization whose members include transmission providers, transmission users and regulatory commissions. 3746 E Braewood N. Ave, Las Vegas, NY 89120. (702) 369-7133. Web address: www.swrta.org

Spinning Reserve: Electric generating units connected to the system that can automatically respond to frequency deviations and operate when needed.

Spot Market: A market characterized by short-term, typically interruptible or best efforts contracts for specified volumes. The bulk of the natural gas spot market trades on a monthly basis, while power marketers sell spot supplies on an hourly basis.

Standards of Conduct: When FERC established the requirement for companies to use OASIS systems in electric transmission (Order 889), it also established a code of conduct to ensure that transmission owners and their affiliates would not have an unfair competitive advantage in using the transmission lines to sell power.

Standby Demand: The demand specified by contractual arrangement with a customer to provide power and energy to that customer as a secondary source or backup for the outage of the customer's primary source. Standby Demand is intended to be used infrequently by any one customer.

Step-Down/Step-Up: Step-Down is the process of changing electricity from a higher to a lower voltage. Step-up is the opposite. Step-up transformers are usually located at generator sites, while step-down transformers are found on the distribution side.

Storage: Energy transferred from one entity to another with the ability to conserve the energy (stored as water in a reservoir, coal in a pile, etc.) with the intent to return the energy at a later time.

Stranded Investment: An investment originally approved for recovery by regulators, but rendered uneconomic as a result of deregulation. This mainly refers to power plants, especially nuclear plants, that would not be competitive in a deregulated market.

Substation: Equipment that switches, steps down, or regulates voltage of electricity. Also serves as a control and transfer point on a transmission system.

Supervisory Control and Data Acquisition (SCADA): A system of remote control and telemetry used to monitor and control the electric transmission system.

Take-or-Pay: A clause in a contract that provides a minimum quantity of the commodity that must be paid for, whether or not delivery is accepted by the purchaser, for a specified period. Most contracts contain a time period in which the buyer may take later delivery without penalty.

Tariff: A document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule of prices, under which utility services will be provided.

Telemetering: Use of an electrical apparatus to transmit data to a distant point for indicating, recording, or integrating the values of a variable quantity.

Tennessee Valley Authority: The nation's largest wholesale producer of electricity and a wholly owned U.S. government corporation. 400 W. Summit Hill Dr., Knoxville, TN 37902 (865) 632-2101 Web address: www.tva.com

Total Transmission Capability (TTC): The amount of electric power that can be transferred over the interconnected transmission network in a reliable manner at a given time.

TRANSCO (Transmission Company): The concept of a company engaged solely in the transmission function – another kind of regional transmission organization. A transco owns and operates the regional transmission system. Also refers to the portion of an electric utility's business that involves bulk transmission of power, operated separately from any other power functions the utility might own or operate.

Transfer Capability: The measure of the ability of interconnected electric systems to move or transfer power in a reliable manner from one area to another over all transmission lines (or paths) between those areas under specified system conditions. Generally expressed in megawatts (mw). In this context, "area" may be an individual electric system, power pool, Control Area, sub region or NERC region, or a portion of any of these.

Transformer: Electrical device that changes the voltage in AC circuits.

Transmission Loading Relief (TLR): Procedures developed by NERC to mitigate operating security limit violations.

Transmission Operating Agreement (TOA): An agreement between an RTO and a utility whereby the utility assigns control over the utility's transmission system in exchange for the RTO agreeing to make payment to the utility to cover the utility's transmission system costs.

Transmission Reliability Margin (TRM): Amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions.

Transmission: The process of transporting wholesale electric energy at high voltages from a supply source to utilities. (Transmission contrasts with "distribution," which refers to local facilities used to deliver power at low voltages to consumers within a utility's service area.)

Turbine: A turbine takes a fluid such as water or hot gas and harnesses that fluid for use as a form of energy.

Vertical Integration: Refers to the traditional electric utility structure whereby a company has direct control over its transmission, distribution and generation facilities and can offer a full range of power services.

Volatility: The market's price range and movement within that range. The direction of the price move, whether up or down, is not relevant. Historic volatility indicates how much prices have changed in the past and is derived by using daily settlement prices for futures. Implied volatility measures how much the market thinks prices will change in the future, obtained from daily settlement prices for options.

Volt: The unit of electromotive force or electric pressure which, if steadily applied to a circuit having a resistance of one ohm, would produce a current of one ampere.

Voltage-Ampere-Reactive (VAR): A measure of reactive power.

Watt: The electrical unit of real power or rate of doing work, equivalent to one ampere flowing against an electrical pressure of one volt. One watt is equivalent to about 1/746 horsepower, or one joule per second.

WestConnect: A group of Southwestern electric utilities, along with interested parties, that have joined to develop an RTO for the desert Southwest. (Formerly known as Desert Star.)

Western Regional Transmission Association (WRTA): Voluntary, non-profit organization of transmission providers and users in the U.S. and regulatory commissions within the Western Interconnection. 615 Arapeen Dr., Suite 210, Salt Lake City, UT 84108 (801) 583-3155. Web address: www.wrta.net

Western Systems Coordinating Council (WSCC): A group of utilities banded together to promote reliability by coordinating the power supply and transmission in the West.

Wheeling: In the electric market "wheeling" refers to the interstate sale of electricity or the transmission of power from one system to another.

Wholesale Competition: A system in which a distributor of power would have the option to buy its power from a variety of power producers, and the power producers would be able to compete to sell their power to a variety of distribution companies.

Wholesale Electricity: Power that is bought and sold among utilities, non-utility generators and other wholesale entities, such as municipalities.

Wholesale Power Market: The purchase and sale of electricity from generators to resellers (who sell to retail customers) along with the ancillary services needed to maintain reliability and power quality at the transmission level.

Wholesale Wheeling: The transmission of electricity from a wholesale supplier to another wholesale supplier by a third party.

Winter Peak: The winter peak period begins on Dec. 1 and extends through March 31 of the following year.

Wires Charge: A fee that is imposed on retail power providers or their customers to use a utility's transmission and distribution system.

ACRONYMS

AC: Alternating current

ACC: Area Control Center

ACE: Area Control Error

ADR: Alternative Dispute Resolution

APPA: American Public Power Association

APX: Automated Power Exchange

ARRE: Affiliated Regional Reliability Entity (same as Regional Reliability Org.)

AS or A/S: Ancillary Services

ATC: Available Transmission Capacity

ATNI: Affiliated Tribes of Northwest Indians

AVA: Avista (formerly known as Washington Water Power)

BCH; **BCHA**: British Columbia Hydropower Authority

BPA: Bonneville Power Administration

BPAP: BPA's Power Business Line

BPAT: BPA's Transmission Business Line

CA: Control Area

CAISO/Cal ISO: California Independent System Operator

CAO: Control Area Operator

CBM: Capacity Benefit Margin

CBO: Congressional Budget Office.

CCF: Critical Control Facilities

CCP: Consumers, Commissioners &Public Interest Groups

CCPG: Colorado Coordinated Planning Group

CECA: Comprehensive Electricity Competition Act

CEO: Chief Executive Officer

CFR: Code of Federal Regulations (used in RTO bylaws and TOA)

CHPD: Chelan County Public Utility District

CM: Congestion Management

COB: the California-Oregon Border (used when referring to the PACI)

COI: California-Oregon Intertie

Co-op: Electric Cooperative

CREPC: Committee on Regional Electric Power Cooperation

CTC: Competition Transition Charge

DA: Direct Assignment

DC: Direct Current

DGT: Deseret G&T (Utah)

DOE: U. S. Department of Energy

DOPD: Douglas County Public Utility District (Washington)

DRS: Dispute Resolution Service

DSI: Direct service industry.

DSM: Demand Side Management

EA: Environmental assessment

EEI: Edison Electric Institute

EHV: Extra High Voltage

EI: Eastern Interconnection

EIA: Energy Information Administration

EIA: Energy Information Administration

EIS: Environmental impact statement

ELCON: Electricity Consumers Resource Council

EPRI: Electric Power Research Institute

ERCOT: Electric Reliability Council of Texas

ERCOT: Electric Reliability Council of Texas

EU: End Users

EWG: Exempt Wholesale Generator

FASB: Financial Accounting Standards Board

FCR: Firm Capacity Right(s)

FDF(s): Flow Distribution Factor(s) (same as PUFs)

FERC: Federal Energy Regulatory Commission

FPA: Federal Power Act

FPMA: Federal Power Marketing Administration

FPT: Formula Power Transmission

FRCC: Florida Reliability Coordinating Council

FTR(s): Firm Transmission Right(s)

GCC: Generation Control Center

GCPD: Grant County Public Utility District

GIA: Generation Integration Agreement

GIS: Geographic Information Systems

GSU: Generator Step-Up Transformer

GTA: General Transfer Agreement

GUP: Good Utility Practice

HCA: Host Control Area

HE: Hour Ending

HLH: Heavy Load Hours

hp: Horsepower

IGO: Independent Grid Operator

IMO: Independent Electricity Market Operator

IOS: Interconnected Operations Services

IOU: Investor Owned Utility

IPC/IPCO: Idaho Power Company

IPP: Independent Power Producer

IPP: Independent Power Producer

IR: Integration of Resources

IRSC: Independent Regional Security Coordinator (also: PNSC)

ISA: Independent System Administrator.

ISO: Independent System Operator

ITC is an Independent Transmission Company

kv: Kilovolt

kw: Kilowatt

kwh: Kilowatt-hour

LDC: Local distribution company.

LIA: Load Integration Agreement

LLC: Limited Liability Corporation

LLH: Light Load Hours

LMP: Locational Marginal Pricing

LSE: Load Serving Entity

MAAC: Mid-Atlantic Area Council

MAIN: Mid-America Interconnected Network

MAPP: Mid-Continent Area Power Pool

MFN: Most Favored Nation

MI: Market Interface

MIC: Market Interface Committee

MMU: Market Monitoring Unit of the RTO

MORC: Minimum Operating Reliability Criteria

MTO: Major Transmission Owner

MTU: Major Transmission Utility

Muni: Municipal Utility

mw: Megawatt

mwhr: Megawatt hour

NAERO: North American Electric Reliability Organization

NAF: Non-Affiliated

NCP: Non-coincidental Peak

NEB: National Energy Board

NEPA: National Environmental Policy Act of 1969

NERC: North American Electric Reliability Council

NJD: North of John Day (cutplane)

NOB: Nevada-Oregon Border

NOPR: Notice of Proposed Rulemaking

NPCC: Northeast Power Coordinating Council

NRECA: National Rural Electric Cooperative Association

NT: Network Transmission

NU, NUS: Non-Utility Supplier

NUG: Non-Utility Generator

NWPP: Northwest Power Pool

NWPPC: Northwest Power Planning Council

OASIS: Open-Access Same- Time Information System

OATT: Open Access Transmission Tariff.

OOE: Other Operating Entity

OPF: Optimal Power Flow

OTC: Operational Transmission Capability

PAC: PacifiCorp

PACE: PacifiCorp/East

PACI: Pacific AC Intertie (AC line connected the Northwest with California)

PACW: PacifiCorp/West

PBL: BPA's Power Business Line

PBR: Performance-Based Ratemaking

PDCI: Pacific DC Intertie

PEC: Pre-Existing Contract

PG&E: Pacific Gas & Electric

PGE: Portland General Electric

PIG: Public Interest Group

PJM: Pennsylvania-New Jersey-Maryland Interconnection

PM: Power Marketer

PMAs: power marketing administrations

PNCA: Pacific Northwest Coordination Agreement

PNSC: Pacific Northwest Security Coordinator (also: IRSC)

PNUCC: Pacific Northwest Utilities Conference Committee

PPC: Public Power Council

PSCO: Public Service Company of Colorado

PSE: Puget Sound Energy

PSE: Purchasing or Selling Entity

PTP: Point-to-Point

PUF: Path Utilization Factors

PUHCA: Public Utility Holding Company Act

PURPA: Public Utility Regulatory Policies Act

PX: Power Exchange

QF: Qualifying Facility

RAS: Remedial Action Scheme

RE: Regional Entity

RMR: Reliability, Must-Run Resource

ROD: Record of Decision

ROE: Return on Equity

ROR: Rate of return.

RRG: Regional Representative Group

RRO: Regional Reliability Organization

RTA: Regional Transmission Association

RTC: Rated Transfer Capability of a transmission line

RTG: Regional Transmission Group

RTO: Regional Transmission Organization

RTR: Recallable Transmission Right

SC: Scheduling Coordinator or Security Coordinator

SCADA: Supervisory Control and Data Acquisition

SCE: Southern California Edison

SCL: Seattle City Light

SPPC: Sierra Pacific Power Company

SPR: Sierra Power Resources

SRP: Salt River Project (Arizona)

SWRTA: Southwest Regional Transmission Association

TBL: BPA's Transmission Business Line

TCR: Transmission Capacity Reservation

TDU: Transmission Dependent Utility

TLR: Transmission Loading Relief

TMS: Transaction Management System

TO: Transmission Owner

TOA: Transmission Operating Agreement

TPU: Tacoma Public Utilities

TRM: Transmission Reliability Margin

TTC: Total Transfer Capability

TTC: Total Transmission Capacity

TU: Transmitting Utility

USBR: United States Bureau of Reclamation

VAR: Voltage-Ampere-Reactive

WI: Western Interconnection

WICF: Western Interconnection Coordinating Forum

WIEB: Western Interstate Energy Board

WIO: Western Interconnection Organization

WIS: Western Interconnected Systems

WRTA: Western Regional Transmission Association

WSCC: Western Systems Coordinating Council